THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte THOMAS PAUL FEIST, KEVIN HSINGTAO DAI and GLEN DAVID MERFELD

Appeal No. 2006-0467
Application 10/063,004[1]

ON BRIEF

Before GARRIS, KRATZ, and PAK, Administrative Patent Judges.

PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 1 through 41, which are all of the claims pending in the above-identified application. We have jurisdiction pursuant to 35 U.S.C. § 134.

[1] Application for patent filed March 11, 2002.

APPEALED SUBJECT MATTER

The subject matter on appeal is directed to data storage media, such as magnetic or magneto-optic data storage device. See the specification, page 3. Claims 1, 22, 30, 40, and 41 are representative of the appealed subject matter and read as follows:

> 1. A storage media for data, comprising:
> a substrate comprising a single phase plastic resin portion, wherein the plastic resin portion comprises poly(arylene ether) and a styrene material selected from the group consisting of polystyrene, styrenic copolymer(s), and reaction products and combinations comprising at least one of the foregoing styrene material(s); and
> a data layer on the substrate;
> wherein the data layer can be at least partly read from, written to, or a combination thereof by an energy field; and
> wherein, when the energy field contacts the storage media that has a thickness of about 0.8 mm to about 2.5 mm, the energy field is incident upon the data layer before it could be incident upon the substrate.
>
> 22. A storage media for data, the media comprising:
> a substrate comprising a single phase plastic resin portion, wherein the plastic resin portion consists essentially of poly(arylene ether) and a styrene material selected from the group consisting of polystyrene, styrenic copolymer(s), and reaction products and combinations comprising at least one of the foregoing styrene material(s); and
> a data layer on the substrate;
> wherein the data layer can be at least partly read from, written to, or a combination thereof by an energy field; and
> wherein, when the energy field contacts the storage media, the energy field is incident upon the data layer before it could be incident upon the substrate.

30. A method for retrieving data, comprising:

rotating a storage media having a substrate comprising a single phase plastic resin portion and a data layer disposed on a surface of the substrate , wherein the plastic resin portion comprises poly(arylene ether) and a styrene material selected from the group consisting of polystyrene, styrenic copolymer(s), and reaction products and combinations comprising at least one of the foregoing styrene material(s);

directing an energy field at the storage media such that the energy field is incident upon the data layer before it can be incident upon the substrate; and retrieving information from the data layer via the energy field.

40. An optical disk, comprising:

a substrate comprising a single phase plastic resin portion, wherein the plastic resin portion comprises poly(arylene ether) and a styrene material selected from the group consisting of polystyrene, styrenic copolymer(s), and reaction products and combinations comprising at least one of the foregoing styrene material(s); and

a data layer on the substrate;

wherein the data layer can be at least partly read from, written to, or a combination thereof by a light; and

wherein, when the light contacts the storage media, the light is incident upon the data layer before it could be incident upon the substrate.

41. A storage media for data, comprising:

a substrate having a thickness of about 0.8 mm to about 2.0 mm and comprising a single phase plastic resin portion, wherein the plastic resin portion comprises poly(arylene ether) and polystyrene; and

a data layer on the substrate;

wherein the data layer can be at least partly read from, written to, or a combination thereof by an energy field; and

wherein, when the energy field contacts the storage media, the energy field is incident upon the data layer before it could be incident upon the substrate.

PRIOR ART

As evidence of obviousness of the claimed subject matter, the examiner relies on the following prior art references:

Feuerherd et al. (Feuerherd)	5,130,356	Jul. 14, 1992
Landin et al. (Landin)	5,538,774	Jul. 23, 1996
Sandstrom	5,972,461	Oct. 26, 1999

REJECTIONS

Claims 1 through 15 and 18 through 41 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Feuerherd and Sandstrom. Claims 16 and 17 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Feuerherd, Sandstrom, and Landin.

DISCUSSION

We have carefully reviewed the claims, specification, and prior art, including all of the arguments advanced by both the examiner and the appellants in support of their respective positions. This review has led us to conclude that the examiner's § 103 rejections are not well founded. Accordingly, we reverse the examiner's § 103 rejections. Our reasons for this determination follow.

The examiner finds that Feuerherd teaches a rotatable storage media having a substrate made of poly(arylene ether) and a styrene material and a recording layer corresponding to the claimed data layer. See the Answer, page 5. Recognizing that Feuerherd teaches "in laser-optical recording and reading of data, the recording layers are exposed **through** the dimensionally stable substrate (column 19, lines 28-30, emphasis added)," the examiner acknowledges that "Feuerherd et al fail to disclose wherein the energy field is directed at the storage medium such that the energy field is incident upon the data layer before it can be incident upon the substrate... (the Answer, page 5)" In other words, the examiner concedes that the storage media taught by Feuerherd does not have a structural arrangement capable of performing the claimed function. See also pages 2, 3, 13, and 14 of the specification in reference to Figures 1 and 2 in the subject application.

To remedy this deficiency, the examiner relies on the disclosure of Sandstrom. The examiner finds (Answer, page 5) that:

> Sandstrom teaches that it is known to form recording disks such that they are either substrate-incident (col. 1, lines 17-23) or air-incident (col. 1, lines 24-36), but that air-incident recording is preferred because it "has the potential to produce extremely

> small spot sizes using evanescent coupling and the resulting high numerical aperture, thereby providing increased spatial density and data storage capacity" (col. 2, lines 12-16).

Based on this finding, the examiner concludes (id.) that:

> It would therefore have been obvious to one of ordinary skill in the art at the time of the appellants' invention to modify the device of Feuerherd et al. to utilize air-incident recording meeting appellants' [claimed device and] claimed method ...

In so concluding, the examiner fails to explain why one of ordinary skill in the art would have utilized components useful for designing a storage device for substrate-incident recording, such as those used by Feuerherd, in making the air-incident recording storage device of the type discussed in Sandstrom. On this record, the examiner does not provide any rationale why one of ordinary skill in the art would have selected and then modified the substrate-incident recording storage device of Feuerherd, when the storage device of Sandstrom is said to be advantageous for air-incident recording. Accordingly, we reverse the examiner's § 103 rejections.

REMAND

We observe that Sandstrom teaches "rewritable optical data storage media including magneto-optic disks useful in near-field, air-incident recording applications." See column 1, lines 5-7.

We observe that Sandstrom teaches that the "rewritable optical data storage media" has a reflective layer 14, a first dielectric layer 16, a recording layer 18, a second dielectric layer 20, and a third dielectric layer 22 in order on a substrate 12. See Figure 1, in conjunction with column 5, lines 19-33. We observe that Sandstrom further teaches (column 6, line 62 to column 7, line 15) that:

> In an air-incident construction, the optical characteristics of substrate 12 are largely irrelevant. Specifically, because the beam does not enter disk 10 through substrate 12, the optical properties of the substrate have no direct optical effect on performance. In contrast, substrate-incident disks typically require substrates having particular optical properties. Thus, in an air-incident disk, it is conceivable that a wider array of materials may be used to fabricate substrate 12. Also, such materials could be less expensive than higher grade optical materials. For example, substrate 12 can be formed from a variety of materials including thermosets, thermoplastics, metal, or glass. The selected materials can be transparent or opaque. Also, such materials could be selected in part on the basis of the applicable elastic modulus of the material for enhanced rigidity relative to more typical substrate material for optical disks. For optical recording, however, it is typically desirable to form a physical format on substrate 12 to facilitate optical tracking. Therefore, it may be most desirable to form substrate 12 from a material that can be readily replicated with a physical format in a mold.

Although Sandstrom indicates that various plastic resins may be used to form its substrate, it does not specifically mention the claimed plastic resin.

We observe that Feuerherd refers to JP-A-63-0567832 and JP-A-63-013722 as disclosing the claimed substrate, i.e., a substrate made of the claimed plastic resin, which is said to be useful for magneto-optical computer disks which may be inclusive of the magneto-optical disks discussed in Sandstrom. See column 1, line 62 to column 3, line 10. They further teach that the claimed substrate is dimensionally stable and exhibits good adhesion to the protective layers on top of them and can be replicated in a mold. Id.

Thus, upon return of this application, the examiner is to obtain copies of the above-mentioned published Japanese patent applications and English translations thereof to determine whether they, together with Sandstrom, affect the patentability of the claimed subject matter.

CONCLUSION

In view of the foregoing, the decision of the examiner is reversed and the application is remanded to the examiner for appropriate action consistent with the views expressed above.

REVERSED/REMANDED

BRADLEY R. GARRIS)
Administrative Patent Judge)
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) BOARD OF PATENT
PETER F. KRATZ) APPEALS AND
Administrative Patent Judge) INTERFERENCES
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CHUNG K. PAK)
Administrative Patent Judge)

CKP:TF

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CANTOR COLBURN, LLP
55 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002